

The Effectiveness Combination of Five-Finger Hypnosis and Nadhi Shodhana in Reducing Adolescent Dysmenorrhea Pain in Mekarbuwana Village

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Abstract

Dysmenorrhea is the most prevalent complaint among women during menstruation, and it might diminish productivity. Therapies to alleviate dysmenorrhea encompass breathing relaxation, yoga, aromatherapy, warm compresses, hypnosis, and acupressure. Hypnosis is a technique for engaging with an individual's subconscious mind during a state of relaxation. Hypnosis can stimulate the secretion of endorphin chemicals in the body. Nadhi Sodhana is a nasal breathing technique that enhances overall bodily strength, optimizes the respiratory system, eliminates toxins, facilitates oxygenation, and efficiently expels carbon dioxide. The purpose of this research is to determine the effectiveness of the combination of Five Finger Hypnosis and Nadhi Sodhana in reducing the pain of adolescent dysmenorrhea in Mekarbuwana Village. This research used a pre-experimental research design, a one-group pretest-posttest design involving 40 teenage girls who experienced dysmenorrhea in Mekarbuwana Village with a purposive sampling technique with inclusion and exclusion criteria. The research results revealed that 77.5% of the participants experienced moderate pain before receiving the intervention (mean: 4.725). Following the intervention, 66.5% reported experiencing mild pain (mean: 1.375). The bivariate test using Wilcoxon shows that the p-value is 0.000. There is a significant difference in dysmenorrhea pain in adolescents in Mekarbuwana village before and after being given a combination of five-finger hypnosis and Nadhi Sodhana. The combination of five-finger hypnosis with Nadhi Sodhana can reduce dysmenorrhea pain in adolescents. This research is expected to serve as a reference for a simple method that adolescents can perform independently to reduce dysmenorrhea using five-finger hypnosis and Nadhi Sodhana.

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INTRODUCTION

Reproductive health is a state of complete physical, mental, and social health, not merely freedom from disease or disability related to the reproductive system, function, and process in men and women (1). Adolescent reproductive health is one of the scopes of reproductive health services according to the International Conference on Population and Development (ICPD) (2). Endometriosis (the growth of endometrial tissue in an abnormal place) is one of the most common reproductive health problems in adolescents. Endometriosis affects around 10% (190 million) of women and girls worldwide (3). Symptoms of endometriosis include pain during intercourse, defecation, and/or urination; chronic pelvic pain; bloating; nausea; fatigue; and sometimes depression, anxiety, and infertility. The most typical symptom is pain during menstruation (dysmenorrhea).

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Dysmenorrhea, or menstrual pain, is a disorder that occurs during menstruation that most often causes teenagers to go to health services for consultation and treatment (4). This disorder can cause women who experience it to have to leave their routine activities (school or work) to rest for several hours or several days until the pain is resolved. Dysmenorrhea is a symptomatic phenomenon including abdominal pain, cramps, and back pain and is often accompanied by gastrointestinal symptoms such as nausea and diarrhea (5). The incidence of dysmenorrhea in Indonesia is 55% among productive age groups, with 15% of them complaining that their activities are limited due to it (6). The prevalence of dysmenorrhea varies across women of reproductive age worldwide between 16% and 91%, with severe pain occurring in 2%-29% (7). Surakarta showed a high prevalence of dysmenorrhea in adolescents, specifically 87.7% (8). The incidence of dysmenorrhea in Bali in 2014 reached 48.05% (9).

Dysmenorrhea can be treated with pharmacological and non-pharmacological therapy. Non-pharmacological therapies that can be done to reduce dysmenorrhea include breathing relaxation, music therapy, acupuncture, yoga, aromatherapy, warm compresses, hypnosis, and acupressure (10–12). Hypnosis is one method to communicate with a person's subconscious mind while in a relaxed state. Hypnosis, including five-finger hypnosis, can trigger the production of endorphin hormones in the body (13). Yoga combines the unity of body, mind, and soul coordination so that it can help increase relaxation, reduce tension, and produce endorphin hormones so that it can prevent and overcome menstrual pain (dysmenorrhea) (14). Pranayama is an important part of practicing yoga. Pranayama is a breathing technique that can benefit the body of a person who does it correctly, allowing them to regulate their biological life through bioenergy control (prana). Everyone can practice Nadhi Sodhana, one of the yoga pranayama techniques. Nadhi Sodhana, also known as the Anuloma Vioma technique, is a nasal breathing technique that can strengthen the entire body and respiratory system, remove toxins from the body, smooth the oxygenation process in the body, and remove carbon dioxide efficiently (15, 16). Both hypnosis and Nadhi Sodhana can help the body to stimulate the production of endorphin hormones, which are useful for reducing pain due to dysmenorrhea. From the description above, and the frequent dysmenorrhea in adolescents that can interfere with learning activities and self-development, research is needed to find an easy alternative to overcome dysmenorrhea by combining Five Finger Hypnosis and Nadhi Sodhana in reducing dysmenorrhea.

METHODS

This study used a pre-experimental research design, specifically a one-group pretest-posttest design. The target population of this study comprised all young women in Mekarbuana Village who suffered from dysmenorrhea. This study employs purposive sampling, which involves selecting samples based on specific qualities aligned with the research aims, so aiming to address the research topic effectively. Inclusion criteria: Adolescent females aged 12–15 years who suffer from dysmenorrhea, are unmarried, possess effective communication skills, exhibit no current abnormalities in the uterus or other reproductive organs, are free from reproductive organ diseases, and do not utilize analgesics for dysmenorrhea. Exclusion criteria: Adolescent females who are unwilling to participate as respondents. Teenage girls who need more therapy or are incapable of enduring pain are excluded. This study comprised a sample size of 40 respondents. The

analytical method employed is the Wilcoxon test to ascertain the disparity between the treatment and control groups. Data analysis uses a 95% confidence threshold, equivalently expressed as $p < 0.05$. The numeric rating scale (NRS) is used to assess dysmenorrhea pain. Value 0 indicates no discomfort; values 1-3 denote mild pain; values 4-6 represent moderate pain; and values 7-10 signify severe pain. The intervention was administered weekly for four weeks, with each session lasting 30 minutes. The intervention provided is a synthesis of five-finger hypnosis and nadhi sodhana. Nadhi Sodhana is performed for 10 minutes, followed by five-finger hypnosis for 20 minutes. The pretest was administered on the initial day of the respondent's menstruation, whereas the posttest was given on the first day of menstruation in the subsequent menstrual cycle.

RESULTS AND DISCUSSION

1) Characteristics of Research Subjects

Table 1. Characteristics of Research Subjects

Characteristics	f	%	mean $\pm$ SD
Age			13.5$\pm$2.136
Early Teens	30	75	
Middle Teenagers	9	22.5	
Late Teenagers	1	2.5	
Total	40	100	
Family History of Dysmenorrhoea			
Yes	24	40	
No	16	60	
Total	40	100	

Based on table 1, it is found that based on age characteristics, the majority of respondents are in the early adolescent group, namely 30 people (75%) and the majority have a history of dysmenorrhea in the family, namely 24 people (60%).

Table 2. Frequency Distribution of Pain Levels Before Intervention

Pain Level	Before			After			P value
	f	%	mean $\pm$ SD	f	%	mean $\pm$ SD	
			4.725$\pm$0.48			1.375$\pm$0.59	0.000
No Pain				10	25		
Mild Pain	5	12.5		26	65		
Moderate Pain	31	77.5		4	10		
Severe Pain	2	10					
Controlled							
Total	40	100		40	100		

Based on table 2, it was found that before the intervention was given, the majority of respondents experienced moderate pain, as many as 31 people (77.5%). the majority of respondents experienced mild pain after intervention, as many as 26 people (65%). The statistical test used to conduct bivariate analysis is Wilcoxon because the results of the

data normality test obtained data that were not normally distributed p value 0.000 (<0.05), at the pain level before and the pain level after the intervention. The average pain value before the intervention was 3.1, decreasing after the intervention as seen from the average pain value after the intervention, which was 1.325. There is a significant difference in dysmenorrhea pain in adolescents in Mekarbuwana village before and after being given a combination of five-finger hypnosis and Nadhi Sodhana. The combination of five finger hypnosis with Nadhi Sodhana can reduce dysmenorrhea pain in adolescents.

1) Characteristics of Research Subjects

Seventy-five percent of the participants in this study were in the early adolescent age range. Early adolescents are individuals aged 11 to 14 years. The findings of this study align with prior research indicating that the majority of respondents were 14 years old, categorized within the early teenage group (17). The age of a woman influences the prevalence of primary dysmenorrhea, typically attributed to elevated secretion of the hormone prostaglandin. In young girls who start their periods early (before age 12), their reproductive organs are not fully developed, which causes the cervix to tighten and leads to painful periods because their reproductive system isn't working well. Longer periods cause the uterus to contract more often, which raises prostaglandin levels that tighten blood vessels and make the uterus contract, along with more calcium entering smooth muscle cells, ultimately leading to reduced blood flow and pain in the lower abdomen (18).

2) Level of Dysmenorrhea Pain Before Intervention

The study results indicated that a majority of respondents, specifically 31 individuals (77.5%), reported moderate pain prior to the intervention. The findings of this study align with WHO data from 2015, indicating that over 50% of women in each country experience dysmenorrhea, with 72% in Sweden, nearly 90% in America, and 10–15% suffering from severe dysmenorrhea that impedes their ability to engage in activities during episodes (19). The study's findings indicated that dysmenorrhea frequently manifests on the first and second days of menstruation (73.33%), with a pain intensity rating of 7–10 (severe pain was reported by 50%), and 90% of participants do not utilize any therapies during dysmenorrhea (20). Dysmenorrhea is influenced by various factors, including internal factors such as age of menarche, familial history, duration of period, and exercise habits, as well as external factors including stress, nutritional condition, and consumption of fast food (21).

3) Level of Dysmenorrhea Pain After Intervention

Dysmenorrhea in teens is a menstrual disorder that frequently disrupts everyday activities, particularly in academic settings, resulting in diminished focus and fatigue during learning. Consequently, it is essential to implement straightforward measures to alleviate the experienced discomfort. The study results indicate that following the intervention, the majority of respondents, specifically 26 individuals (65%), reported minor pain, with an average score of 1.375. This score indicates a reduction in the pain level following the intervention, which is 4.75. The results of this study match other research showing that the group using the five-finger hypnosis intervention had lower dysmenorrhea pain scores, with an average score of 1.6 (22). This aligns with prior studies indicating that yoga helps diminish dysmenorrhea in adolescents, decreasing the average score from 3.9 before the intervention to 1.4. Nadhi Sodhana is a pranayama technique within the practice of yoga. Yoga and five-finger hypnosis are non-pharmacological methods that have been empirically validated to alleviate dysmenorrhea in teens. Additional non-pharmacological interventions that can empirically alleviate dysmenorrhea encompass warm compresses, abdominal massage, physical activity, and proper nutrition (24). In addition to non-drug treatments, modern care for menstrual pain (dysmenorrhea) includes giving pain relievers that block prostaglandin production, known as drug therapy. The benefits of non-pharmacological approaches

over pharmacological ones encompass the absence of detrimental side effects, simplicity, and the potential to enhance quality of life.

4) Differences in Dysmenorrhea Pain Before and After Intervention

This study saw a reduction in the pain scale from 4.725 prior to the intervention to 1.375 post-intervention, with a p-value of 0.000. The results show a significant change in menstrual pain levels for teenagers in Mekarbuwana village before and after using a mix of five-finger hypnosis and Nadhi Sodhana. The integration of five-finger hypnosis with Nadhi Sodhana helps alleviate dysmenorrhea discomfort in teens. The findings of this study align with other research indicating that hypnotherapy can decrease the pain scale from 6.50 to 1.35 post-intervention, with a p-value of 0.001 (25). Research on the efficacy of yoga in alleviating dysmenorrhea revealed a reduction in the pain scale from 3.9 to 1.4, with a p-value of 0.000. Hypnosis is a rapid and effective method for accessing the subconscious mind, facilitating re-education, and healing psychological ailments.

Roy's adaptation hypothesis posits that upon receiving a stimulus, an individual undergoes a process of cognitive and regulatory adaptation. The intermediate of the regulatory system is labeled chemical, nervous, or endocrine, whereas the intermediary of the cognitive system is referred to as perception, information processing, decision-making, and emotion. Regulators and cognators collaborate to uphold an individual's integrity. Hypnotherapy influences the cerebral cortex's cognitive and emotional functions, leading to positive views and relaxation and indirectly aiding in the maintenance of the body's homeostatic equilibrium. The HPA axis generates corticotropin-releasing factor (CRF). Furthermore, CRF stimulates the pituitary gland to reduce the synthesis of ACTH, thereby boosting the production of endorphins. This, in turn, lowers the levels of cortisol and other stress hormones, leading to a reduction in pain.

Schulz-Stubner's findings show that when MRI was first used to study brain activity during hypnosis for pain relief, there was less activity in the area that processes pain and more activity in other parts of the brain. The cerebral region experienced an increase in activity during hypnosis. This increase may be nonspecific, although it evidently diminishes or obstructs pain signals from reaching the cortical structure. The pineal network operates as a relay system. Pain signals originate from peripheral nerves at the site of the stimulus, then enter the spinal cord for processing before being transmitted to the brainstem. The signal travels to the midbrain region and ultimately reaches the cerebral cortex, which connects to the conscious awareness of external stimuli, including pain. The way the lower pain network works stays the same whether or not someone is under hypnosis, but hypnosis lowers the activity in the upper area (cortex) that is connected to feeling pain. The study's findings indicate that hypnotherapy effectively decreases pain levels. During hypnosis, there is a reduction in brain activity within the pain perception region, specifically the primary sensory cortex. In two other parts of the brain, the left anterior cingulate cortex and the basal ganglia, there is increased activity, which helps block pain signals from reaching the areas that process pain.

Pranayama is a yogic discipline that emphasizes the regulation of breath. In Sanskrit, prana signifies "vital life force," whereas yama denotes control. In yoga, breath correlates with prana; thus, pranayama serves as a method to enhance prana shakti, or life energy. Pranayama specifically denotes the regulating of breath. Breath serves a vital function in existence as it acts as a connection between the physical and spiritual realms. The process of respiration, or prana, must be meticulously regulated to generate optimal and advantageous pranic energy for the body, mental health, and tranquility. Prana serves as the foundation for the Pranamaya Kosa layer, rendering this vital energy a crucial pillar for bodily well-being (26).

We conduct all pranayama practices under four categories: exterior pranayama, internal pranayama, intermediary pranayama, and transcendental pranayama. External pranayama, or *bahya vritti*, entails the controlled expulsion of air

from the body through the process of exhalation (recaka) with heightened awareness. Internal pranayama, or abhyantara vr̥tti, is the technique of regulating the air intake during inhalation, commonly referred to as puraka (27). Intermediary pranayama, or abhyantara vr̥tti, is a technique for regulating the inhalation and exhalation of air, frequently involving breath retention (kumbhaka). Subsequently, pranayama in the fourth phase is referred to as transcended pranayama.

CONCLUSION

There is a significant difference in dysmenorrhea pain in adolescents in Mekarbuwana village before and after being given a combination of five-finger hypnosis and Nadhi Sodhana.

This research can provide implications for knowledge as a reference for several non-pharmacological techniques to reduce dysmenorrhea pain in adolescents and for village officials to be able to include health programs to improve adolescent reproductive health, one of which is by providing five fingers hypnosis and Nadhi Sodhana regularly.

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